

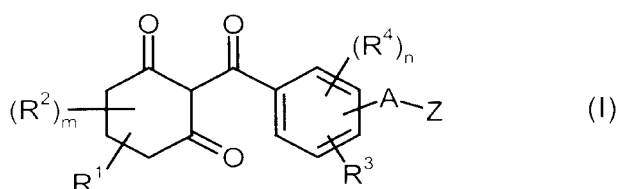
- including all possible tautomeric forms of the compounds of the general formula (I)  
and the possible salts of the compounds of the general formula (I).

# DETAILED DESCRIPTION OF THE INVENTION--

## IN THE CLAIMS:

Please amend Claims 1-11 as follows:

1. Substituted benzoylcyclohexanediones of the [general] formula (I),



in which

- m represents the numbers 0, 1, 2 or 3,
- n represents the numbers 0, 1, 2 or 3,
- A represents the single bond or represents alkanediyl (alkylene),
- R<sup>1</sup> represents hydrogen or represents [in each case optionally] unsubstituted or substituted alkyl or alkoxycarbonyl,
- R<sup>2</sup> represents [optionally] unsubstituted or substituted alkyl, or together with R<sup>1</sup> represents alkanediyl (alkylene) where in this case m represents 1 and R<sup>1</sup> and R<sup>2</sup> are located at the same carbon atom ("geminal") or at two adjacent carbon atoms ("vicinal"),
- R<sup>3</sup> represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, or represents [in each case optionally] unsubstituted or substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino or dialkylaminosulphonyl,
- R<sup>4</sup> represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, or represents [in each case optionally] unsubstituted or substituted alkyl, alkoxy, alkylthio, alkylsulphinyl, alkylsulphonyl, alkylamino, dialkylamino or dialkylaminosulphonyl, and

Z represents an [optionally] unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping which contains 1 to 4 heteroatoms [(up to 4 nitrogen atoms and, if appropriate, - alternatively or additionally - one oxygen atom or one sulphur atom, or one SO grouping or one SO<sub>2</sub> grouping)], and which additionally contains one to three groups selected from oxo groups (C=O), thioxo groups (C=S) and mixtures thereof as components of the heterocycle,

including all possible tautomeric forms of the compounds of the [general] formula (I) and the possible salts of the compounds of the [general] formula (I).

2. Substituted benzoylcyclohexanediones according to Claim 1, [characterized in that] wherein:

m represents the numbers 0, 1 or 2,

n represents the numbers 0, 1 or 2,

A represents a single bond or represents alkanediyl (alkylene) having 1 to 4 carbon atoms,

R<sup>1</sup> represents hydrogen, or represents [optionally] unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl having 1 to 6 carbon atoms or represents alkoxycarbonyl having up to 6 carbon atoms,

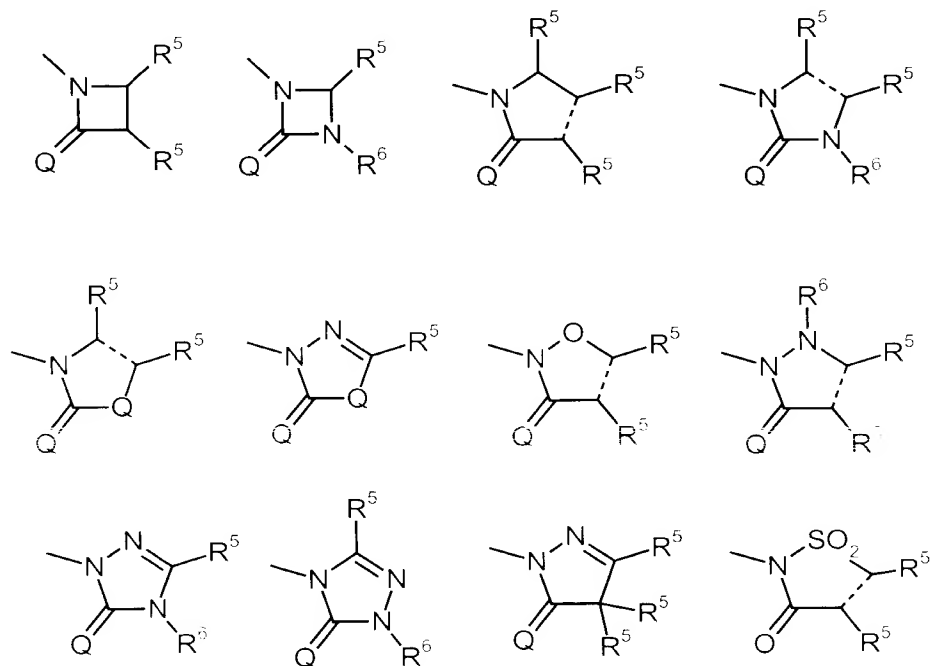
R<sup>2</sup> represents [optionally] unsubstituted or halogen-substituted alkyl having 1 to 6 carbon atoms, or together with R<sup>1</sup> represents alkanediyl (alkylene) having 2 to 5 carbon atoms, where in this case m represents 1 and R<sup>1</sup> and R<sup>2</sup> are located at the same carbon atom ("geminal") or at two adjacent carbon atoms ("vicinal").

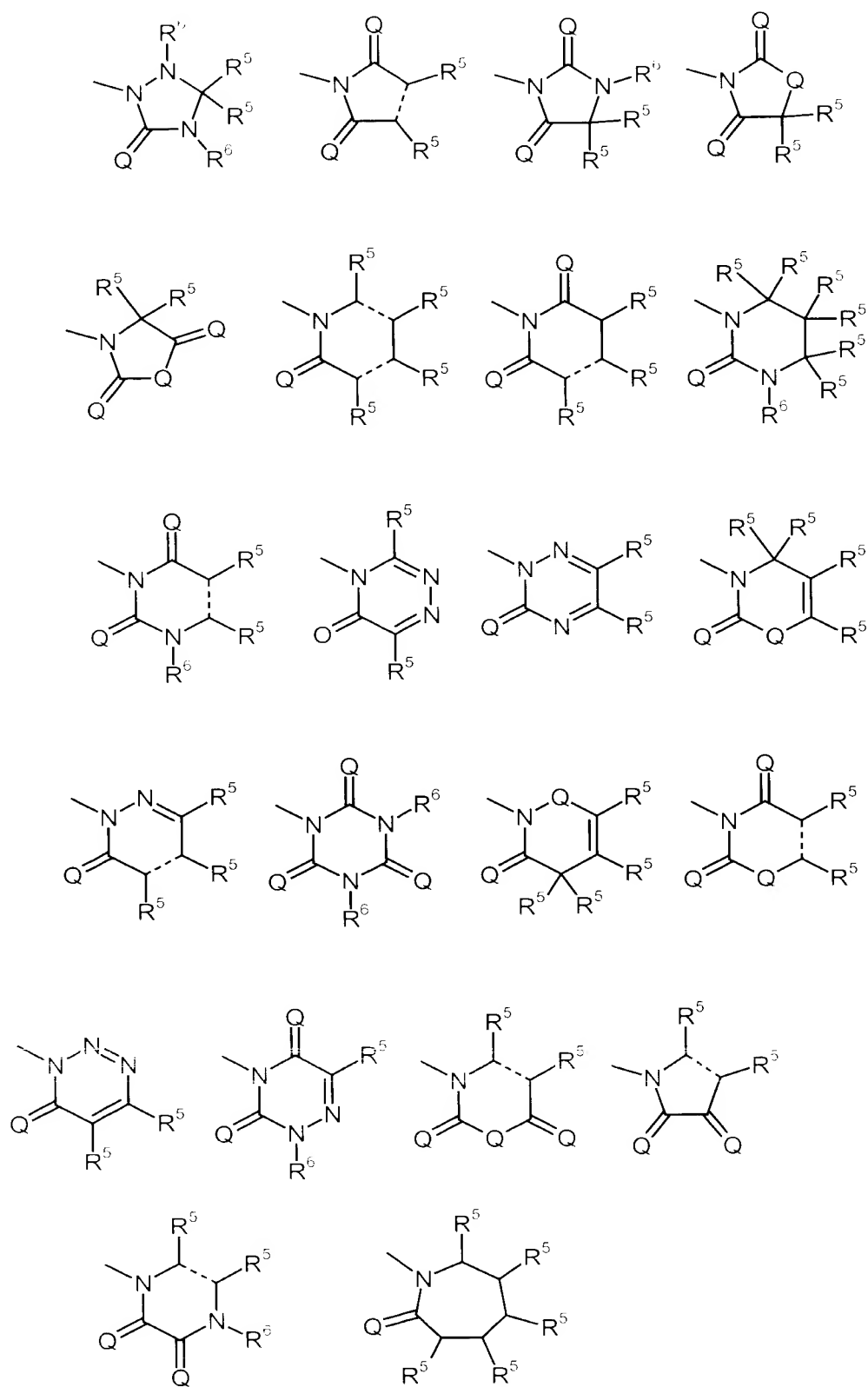
R<sup>3</sup> represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, represents [in each case optionally] unsubstituted or

halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups,

R<sup>4</sup> represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, represents [in each case optionally] unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having [in each case] up to 4 carbon atoms in the alkyl groups, and

Z represents one of the heterocyclic groupings below





in which the bond drawn broken in each case denotes a single bond or a double bond,

Q represents oxygen or sulphur,

R<sup>5</sup> represents hydrogen, hydroxyl, mercapto, cyano, halogen, or represents [in each case optionally] unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl, alkylcarbonyl, alkoxy, alkoxy carbonyl, alkylthio, alkylsulphinyl or alkylsulphonyl having in each case up to 6 carbon atoms in the alkyl groups, or represents [in each case optionally] unsubstituted or halogen-substituted alkylamino or dialkylamino having in each case up to 6 carbon atoms in the alkyl groups, or represents [in each case optionally] unsubstituted or halogen-substituted alkenyl, alkynyl, alkenyloxy, alkenylthio or alkenylamino having in each case up to 6 carbon atoms in the alkenyl or alkynyl groups, or represents [in each case optionally] unsubstituted or halogen-substituted cycloalkyl, cycloalkylalkyl, cycloalkyloxy, cycloalkylthio or cycloalkylamino having in each case 3 to 6 carbon atoms in the cycloalkyl groups and optionally up to 4 carbon atoms in the alkyl moiety, or represents [in each case optionally] unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkyl- or C<sub>1</sub>-C<sub>4</sub>-alkoxy-substituted phenyl, phenyloxy, phenylthio, phenylamino, benzyl, benzyloxy, benzylthio or benzylamino, and

R<sup>6</sup> represents hydrogen, hydroxyl, amino, alkylideneamino having up to 4 carbon atoms, or represents [in each case optionally] unsubstituted or halogen- or C<sub>1</sub>-C<sub>4</sub>-alkoxy-substituted alkyl, alkoxy, alkylamino, dialkylamino or alkanoylamino having in each case up to 6 carbon atoms in the alkyl groups, or represents [in each case optionally] unsubstituted or halogen-substituted alkenyl, alkynyl or alkenyloxy having in each case up

to 6 carbon atoms in the alkenyl or alkynyl groups, or represents [in each case optionally] unsubstituted or halogen-substituted cycloalkyl, cycloalkylalkyl or cycloalkylamino having in each case 3 to 6 carbon atoms in the cycloalkyl groups and optionally up to 3 carbon atoms in the alkyl moiety, or represents [in each case optionally] unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkyl- or C<sub>1</sub>-C<sub>4</sub>-alkoxy-substituted phenyl or benzyl, or together with an adjacent radical R<sup>5</sup> or R<sup>6</sup> represents [optionally] unsubstituted or halogen- or C<sub>1</sub>-C<sub>4</sub>-alkyl-substituted alkanediyl having 3 to 5 carbon atoms, or - in the case that two adjacent radicals R<sup>5</sup> and R<sup>5</sup> are located at a double bond - together with the adjacent radical R<sup>5</sup> also represents a benzo grouping.

3. Substituted benzoylcyclohexanediones according to Claim 1, [characterized in that] wherein:

m represents the numbers 0, 1 or 2,

n represents the numbers 0, 1 or 2,

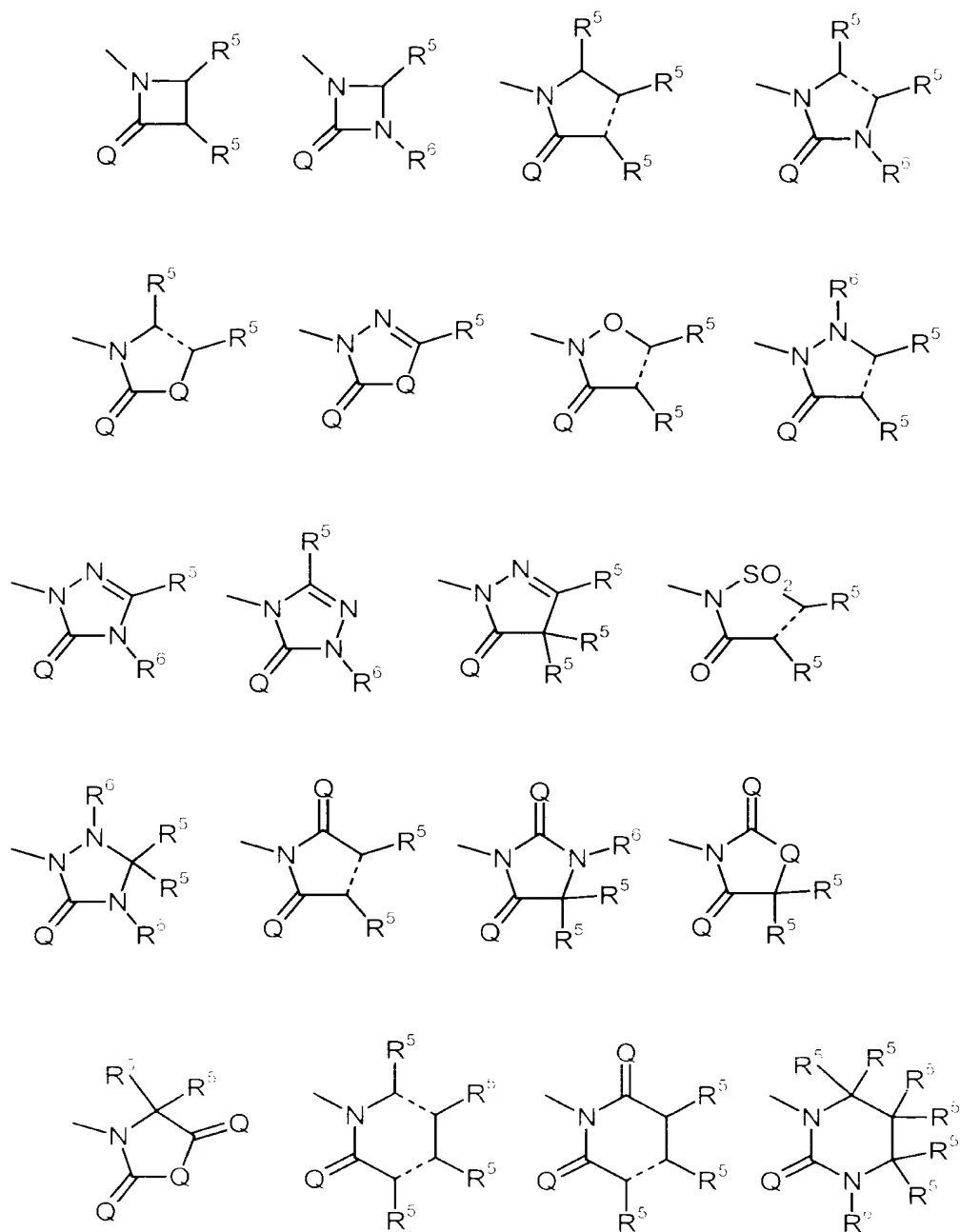
A represents a single bond, methylene, ethylidene (ethane-1,1-diyl) or dimethylene (ethane-1,2-diyl),

R<sup>1</sup> represents hydrogen, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methoxy-, ethoxy-, n- or i-pro-poxy-, methylthio-, ethylthio-, n- or i-propylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, methylsulphonyl-, ethylsulphonyl-, n- or i-propylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i- or s-butyl, or represents methoxycarbonyl, ethoxy-carbonyl, n- or i-propoxycarbonyl,

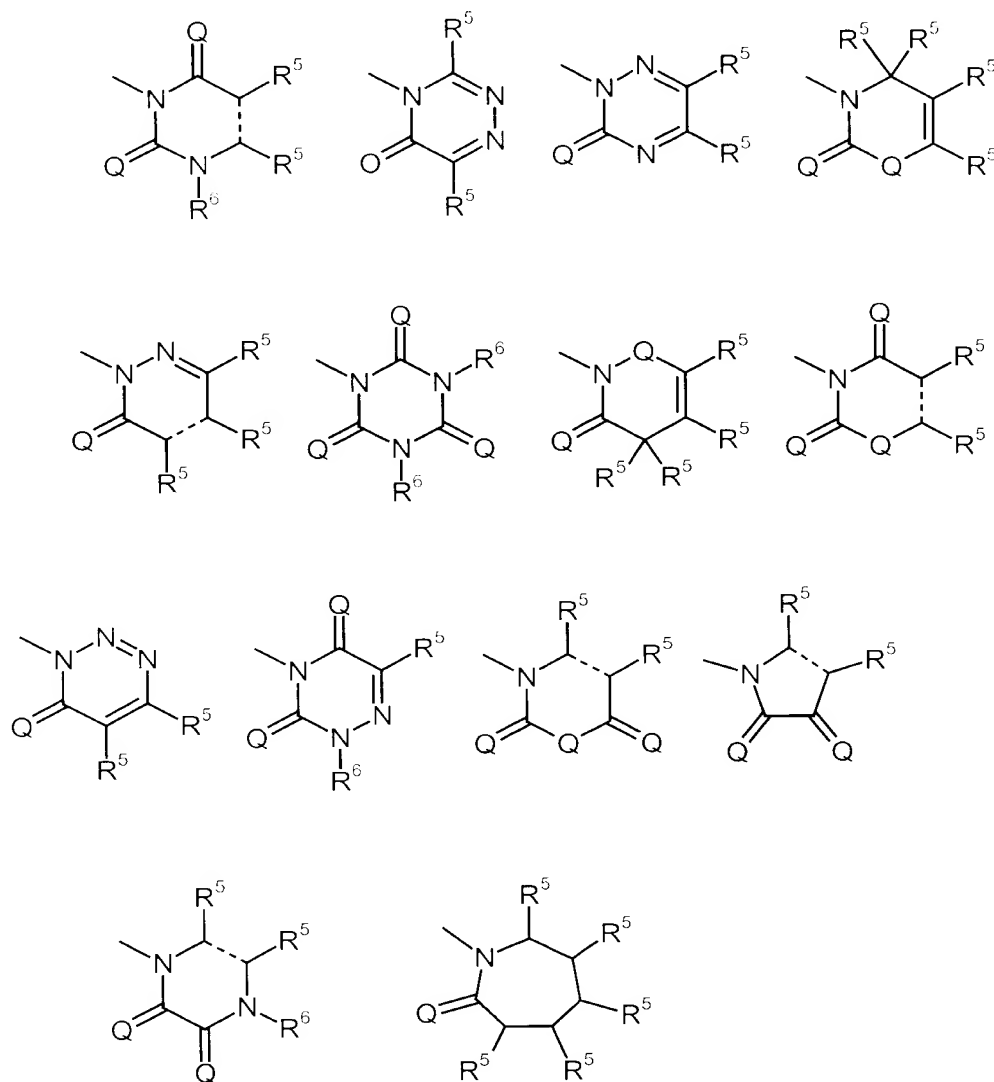
R<sup>2</sup> represents methyl, ethyl, n- or i-propyl, or together with R<sup>1</sup> represents methylene, ethane-1,1-diyl (ethylidene, -CH(CH<sub>3</sub>)-), ethane-1,2-diyl (dimethylene, -CH<sub>2</sub>CH<sub>2</sub>-), propane-1,3-diyl (trimethylene, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>-), butane-1,4-diyl (tetramethylene, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>-) or

- pentane-1,5-diyl (pentamethylene,  $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2-$ ), where in this case m represents 1 and  $\text{R}^1$  and  $\text{R}^2$  are located at the same carbon atom ("geminal") or at two adjacent carbon atoms ("vicinal"),
- $\text{R}^3$  represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, fluorine, chlorine, bromine, or represents [in each case optionally] unsubstituted or fluorine- and/or chlorine-, methoxy-, ethoxy-, n- or i-propoxy-, methylthio-, ethylthio-, n- or i-propylthio-, methylsulphinyl-, ethylsulphinyl-, methylsulphonyl- or ethylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, or represents [in each case optionally] unsubstituted or fluorine- and/or chlorine-, methoxy-, ethoxy-, n- or i-propoxy-substituted methoxy, ethoxy, n- or i-propoxy, or represents [in each case optionally] unsubstituted or fluorine- and/or chlorine-substituted methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents methylamino, ethylamino, n- or i-propylamino, dimethylamino, diethylamino, dimethylaminosulphonyl or diethylaminosulphonyl,
- $\text{R}^4$  represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, fluorine, chlorine, bromine, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, fluorine and chlorine-, methoxy-, ethoxy-, n- or i-propoxy-, methylthio-, ethylthio-, n- or i-propylthio-, methylsulphinyl-, ethylsulphinyl-, methylsulphonyl- or ethylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, fluorine and chlorine-, methoxy-, ethoxy-, n- or i-propoxy-substituted methoxy, ethoxy, n- or i-propoxy, represents in each case optionally fluorine- and/or chlorine-substituted methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents methylamino, ethylamino, n- or i-propylamino, dimethylamino,

diethylamino, dimethylaminosulphonyl or diethylaminosulphonyl, and  
 Z represents one of the heterocyclic groupings below







in which the bond drawn broken in each case denotes a single bond or a double bond,

$Q$  represents oxygen or sulphur,

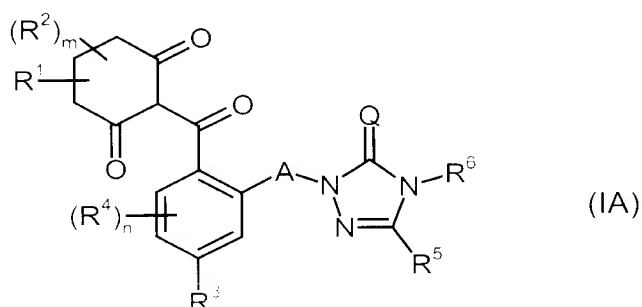
$R^5$  represents hydrogen, hydroxyl, mercapto, cyano, fluorine, chlorine, bromine, iodine, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methoxy-, ethoxy-, n- or i-propoxy-, n-, i-, s- or t-butoxy-, methylthio-, ethylthio-, n- or i-propylthio-, n-, i-, s- or t-butylthio-, methylsulphinyl-, ethylsulphinyl-, n- or i-propylsulphinyl-, methylsulphonyl-,

ethylsulphonyl-, n- or i-propylsulphonyl-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, methoxy, ethoxy, n- or i-propoxy, n-, i-, s- or t-butoxy, methylthio, ethylthio, n- or i-propylthio, n-, i-, s- or t-butylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, represents methylamino, ethylamino, n- or i-propylamino, n-, i-, s- or t-butylamino, dimethylamino, diethylamino, di-n-propylamino or di-i-propylamino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted ethenyl, propenyl, butenenyl, ethinyl, propinyl, butinyl, propenyloxy, butenyloxy, propenylthio, butenylthio, propenylamino or butenylamino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl, cyclopropyloxy, cyclobutyloxy, cyclopentyloxy, cyclohexyloxy, cyclopropylthio, cyclobutylthio, cyclopentylthio, cyclohexylthio, cyclopropylamino, cyclobutylamino, cyclopentylamino or cyclohexylamino, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, methoxy-, ethoxy-, n- or i-propoxy-substituted phenyl, phenyloxy, phenylthio, phenylamino, benzyl, benzyloxy, benzylthio or benzylamino, and

R<sup>6</sup> represents hydrogen, hydroxyl, amino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-, methoxy-, or ethoxy-substituted methyl, ethyl, n- or i-propyl, n-, i- or s-butyl, methoxy, ethoxy, n- or i-propoxy, methylamino, ethylamino or dimethylamino, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted ethenyl.

propenyl, ethinyl, propinyl or propenyloxy, or represents [in each case optionally] unsubstituted or fluorine-, [and/or] chlorine-, or fluorine and chlorine-substituted cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl, cyclohexylmethyl, or represents [in each case optionally] unsubstituted or fluorine-, chlorine-, methyl-, ethyl-, n- or i-propyl-, n-, i-, s- or t-butyl-, methoxy-, ethoxy-, n- or i-propoxy-substituted phenyl or benzyl, or together with an adjacent radical  $R^5$  or  $R^6$  represents [in each case optionally] unsubstituted or methyl- and/or ethyl-substituted propane-1,3-diyl (trimethylene) or butane-1,4-diyl (tetramethylene), or - in the case that two adjacent radicals  $R^5$  and  $R^5$  are located at a double bond - together with the adjacent radical  $R^5$  also represents a benzo grouping.

4. Substituted benzoylcyclohexanediones according to Claim 1, [characterized by the general] having the formula (IA),



in which

m represents the numbers 0, 1 or 2.

n represents the numbers 0, 1 or 2.

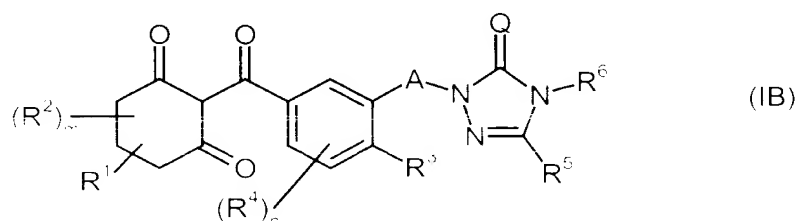
A represents a single bond or represents methylene.

Q represents oxygen or sulphur.

$R^1$  represents hydrogen, methyl, ethyl, n- or i-propyl,

- R<sup>2</sup> represents methyl,
- R<sup>3</sup> represents hydrogen, nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,
- R<sup>4</sup> represents nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,
- R<sup>5</sup> represents methyl, ethyl, n- or i-propyl, trifluoromethyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents cyclopropyl, and
- R<sup>6</sup> represents methyl, ethyl, methoxy, ethoxy or cyclopropyl.

5. Substituted benzoylcyclohexanediones according to Claim 1, [characterized by the general] having the formula (IB),

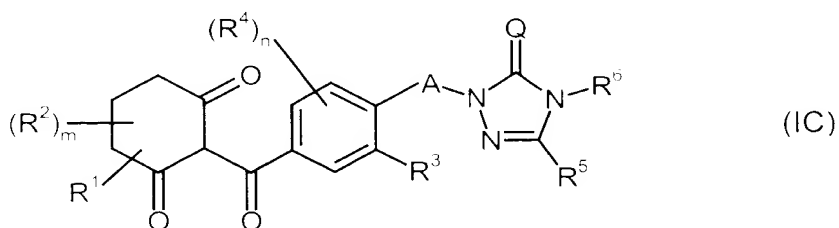


[in which]

in which

- m represents the numbers 0, 1 or 2.
- n represents the numbers 0, 1 or 2.

- |                |  |
|----------------|--|
| A              | represents a single bond or represents methylene,  |
| Q              | represents oxygen or sulphur,  |
| R <sup>1</sup> | represents hydrogen, methyl, ethyl, n- or i-propyl,  |
| R <sup>2</sup> | represents methyl,   |
| R <sup>3</sup> | represents hydrogen, nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or dimethylamino-sulphonyl, |
| R <sup>4</sup> | represents nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,            |
| R <sup>5</sup> | represents methyl, ethyl, n- or i-propyl, trifluoromethyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents cyclopropyl, and   |
| R <sup>6</sup> | represents methyl, ethyl, methoxy, ethoxy or cyclopropyl.  |
| 6.             | Substituted benzoylcyclohexanediones according to Claim 1,   |

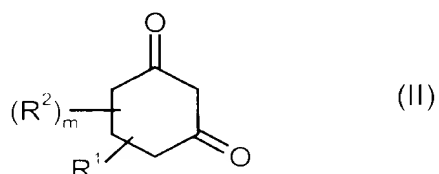


in which

- m represents the numbers 0, 1 or 2,
- n represents the numbers 0, 1 or 2,
- A represents a single bond or represents methylene,
- Q represents oxygen or sulphur,
- R<sup>1</sup> represents hydrogen, methyl, ethyl, n- or i-propyl,
- R<sup>2</sup> represents methyl,
- R<sup>3</sup> represents hydrogen, nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,
- R<sup>4</sup> represents nitro, cyano, fluorine, chlorine, bromine, methyl, ethyl, trifluoromethyl, methoxymethyl, methylthiomethyl, methylsulphinylmethyl, methylsulphonylmethyl, methoxy, ethoxy, difluoromethoxy, trifluoromethoxy, methylthio, ethylthio, methylsulphinyl, ethylsulphinyl, methylsulphonyl, ethylsulphonyl or dimethylaminosulphonyl,
- R<sup>5</sup> represents methyl, ethyl, n- or i-propyl, trifluoromethyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylsulphinyl, ethylsulphinyl, n- or i-propylsulphinyl, methylsulphonyl, ethylsulphonyl, n- or i-propylsulphonyl, or represents cyclopropyl, and
- R<sup>6</sup> represents methyl, ethyl, methoxy, ethoxy or cyclopropyl.

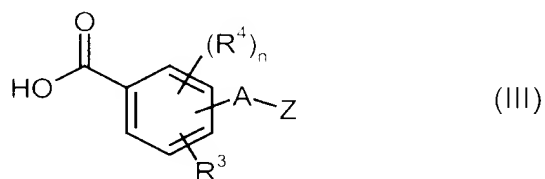
7. Substituted benzoylcyclohexanediones according to [any of Claims 1 to 6, characterized in that] Claim 1, wherein the salts are the sodium, potassium, magnesium, calcium, ammonium, C<sub>1</sub>-C<sub>4</sub>-alkyl-ammonium, di-(C<sub>1</sub>-C<sub>4</sub>-alkyl)-ammonium, tri-(C<sub>1</sub>-C<sub>4</sub>-alkyl)-ammonium, tetra-(C<sub>1</sub>-C<sub>4</sub>-alkyl)-ammonium, tri-(C<sub>1</sub>-C<sub>4</sub>-alkyl)-sulphonium, C<sub>5</sub>- or C<sub>6</sub>-cycloalkyl-ammonium and di-(C<sub>1</sub>-C<sub>2</sub>-alkyl)-benzyl-ammonium salts.

8. [Process] A process for preparing substituted benzoylcyclohexanediones according to [any of Claims 1 to 6, characterized in that] Claim 1, comprising the step of reacting 1,3-cyclohexanedione or its derivatives of the [general] formula (II),



in which

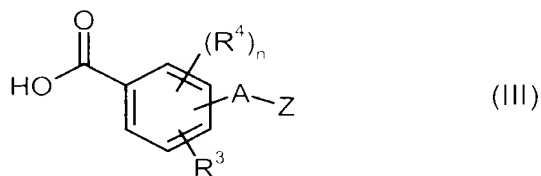
$m$ ,  $R^1$  and  $R^2$  are each as defined in [any of Claims 1 to 6] Claim 1 [are reacted] with substituted benzoic acids of the [general] formula [Formel] (III),



in which

$n$ ,  $A$ ,  $R^3$ ,  $R^4$  and  $Z$  are each as defined in [any of Claims 1 to 6] Claim 1, in the presence of a dehydrating agent to obtain a product [, if appropriate in the presence of one or more reaction auxiliaries and if appropriate in the presence of a diluent, and, if appropriate, the compounds of the formula (I) obtained in this manner are subsequently subjected in a customary manner, within the scope of the definition of the substituents, to electrophilic or nucleophilic or oxidation or reduction reactions, or the compounds of the formula (I) are converted in a customary manner into salts].

9. Substituted benzoic acids of the [general] formula (III),



in which

n, A, R<sup>3</sup>, R<sup>4</sup> and Z are each as defined in [any of Claims 1 to 6] Claim 1, except for the compounds 2-(5-carboxy-2,4-dichloro-phenyl)-4-difluoromethyl-5-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one and 2-(5-carboxy-2,4-dichloro-phenyl)-4,5-dimethyl-2,4-dihydro-3H-1,2,4-triazol-3-one.

10. A method of controlling undesirable plants, comprising the step of applying [Use of at least] one or more substituted benzoylcyclohexanedione according to [any of Claims 1 to 6] Claim 1 [for controlling] to undesirable plants or their habitats.

11. Herbicidal compositions, characterized in that they contain [at least] one or more substituted benzoylcyclohexanedione according to [any of Claims 1 to 6] Claim 1 and [customary] an extender[s].

Please add the following claims:

- 12. Substituted benzoylcyclohexanediones according to Claim 1, wherein:  
Z represents an unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping which contains 1 to 4 heteroatoms selected from the group consisting of nitrogen, oxygen or sulphur, SO, SO<sub>2</sub> or mixtures thereof.
13. Substituted benzoylcyclohexanediones according to Claim 1, wherein:  
Z represents an unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping which contains which contains 1 to 4 nitrogen.
14. Substituted benzoylcyclohexanediones according to Claim 1, wherein:  
Z represents an unsubstituted or substituted 4- to 12-membered, saturated or unsaturated, monocyclic or bicyclic, heterocyclic grouping



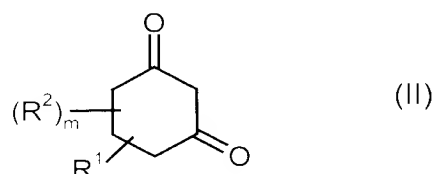
which contains one heteroatom selected from the group consisting of oxygen, sulphur atom, SO and SO<sub>2</sub>.

15. Substituted benzoylcyclohexanediones according to Claim 1, wherein:
- A represents a single bond or represents alkylene having 1 to 4 carbon atoms,
- R<sup>1</sup> represents hydrogen, or represents unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl having 1 to 6 carbon atoms or represents alkoxycarbonyl having up to 6 carbon atoms,
- R<sup>2</sup> represents unsubstituted or halogen-substituted alkyl having 1 to 6 carbon atoms, or together with R<sup>1</sup> represents alkylene having 2 to 5 carbon atoms, where in this case m represents 1 and R<sup>1</sup> and R<sup>2</sup> are located at the same carbon atom or at two adjacent carbon atoms,
- R<sup>3</sup> represents hydrogen, nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, or represents unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having up to 4 carbon atoms in the alkyl groups, and
- R<sup>4</sup> represents nitro, cyano, carboxyl, carbamoyl, thiocarbamoyl, halogen, represents unsubstituted or halogen-, C<sub>1</sub>-C<sub>4</sub>-alkoxy-, C<sub>1</sub>-C<sub>4</sub>-alkylthio-, C<sub>1</sub>-C<sub>4</sub>-alkylsulphinyl- or C<sub>1</sub>-C<sub>4</sub>-alkylsulphonyl-substituted alkyl, alkoxy, alkylthio, alkylsulphinyl or alkylsulphonyl having up to 4 carbon atoms in the alkyl groups, or represents alkylamino, dialkylamino or dialkylaminosulphonyl having up to 4 carbon atoms in the alkyl groups.
16. A process according to Claim 8, wherein the step of reacting the 1,3-cyclohexanedione or its derivatives with the substituted benzoic acids occurs in the

presence of an ingredient selected from the group consisting of reaction auxiliaries, diluents and mixtures thereof.

17. A process according to Claim 8, further comprising the step of subjecting the product to a reaction selected from to group consisting of electrophilic reactions, nucleophilic reactions, oxidation reactions, reduction reactions, and conversions to salts.

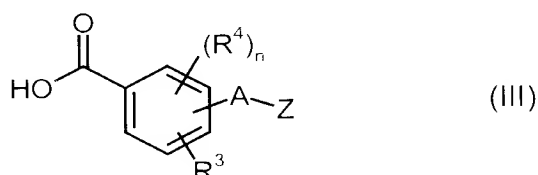
18. A process for preparing substituted benzoylcyclohexanediones according to Claim 1, comprising the step of reacting 1,3-cyclohexanedione or its derivatives of the formula (II),



in which

m, R<sup>1</sup> and R<sup>2</sup> are each as defined in Claim 1,

with a derivative of a substituted benzoic acid of the formula (III),



in which

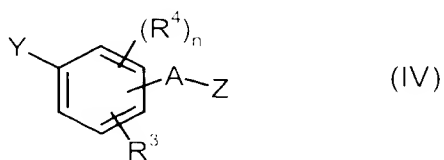
n, A, R<sup>3</sup>, R<sup>4</sup> and Z are each as defined Claim 1,

in the presence of a dehydrating agent to obtain a product;

wherein the derivative of the substituted benzoic acid is selected from the group consisting of carbonyl chlorides, carboxylic anhydrides, carboxylic acid cyanides, methyl carboxylates and ethyl carboxylates.

19. A process according to Claim 8, further comprising the step of preparing the substituted benzoic acids of the formula (III) by:

(a) reacting water and a compound of the formula (IV),



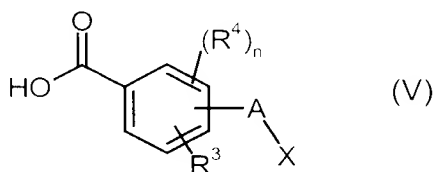
in which

$n$ ,  $A$ ,  $R^3$  and  $R^4$  and  $Z$  are as defined in Claim 1, and

$Y$  represents cyano, carbamoyl, halogenocarbamoyl or alkoxycarbonyl,

or

(b) reacting a halogeno(alkyl)benzoic acid of the formula (V),



in which

$n$ ,  $A$ ,  $R^3$  and  $R^4$  are as defined in Claim 1 and

$X$  represents halogen

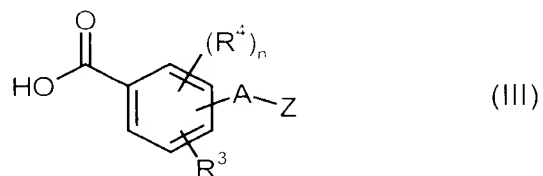
with a compound of the formula (VI)



in which

$Z$  is as defined in Claim 1.

20. Substituted benzoic acids of the formula (III),



in which

$n$  represents the numbers 0, 1, 2 or 3,

$A$  represents the single bond or represents alkylene.